3 March 1964

MEMORANDUM FOR: Chairman, Technical Development Committee

THROUGH : Executive Secretary, TDC

SUBJECT : Staff Study - Automatic 4x5 Inch Film Chip Processor

25X1A REFERENCE : [redacted] Proposal No. 4W-1390 of 24 February 1964 for Automatic 4x5 Inch Film Chip Processor

1. PROBLEM:

To develop an automatic film processor capable of high quality processing of film chips as a companion item of equipment to the chip printer programmed for procurement in Fiscal Year 1964.

2. FACTS:

a. At the present time, considerable effort is being applied to development of what is called a chip concept. This concept is one in which photographic acquisitions of targets and areas of interest are printed out (duplicated) on film in cut sheet form to a specific size and processed. The film chip thus produced will contain all necessary reference and mensuration data and will serve as a ready and convenient medium for a variety of interpretation and analysis operations. After the chip has served its immediate purpose, it can be readily filed in a suitable storage and retrieval system for future use and reference.

b. Under this chip concept, a large number of equipment items will be required to perform the many necessary functions. Two of the very important items required will be the printer for exposing the chips and a processor of a special type for processing the exposed film chips in quantity.

3. DISCUSSION:

a. Only two suitable automatic chip type film processors are known to have been developed. One employed large numbers of rollers configured in layers and between which the film passed as it progressed through the processing cycle. The second employed layers of plastic webbing between which the film was passed. Each of these chip (cut sheet) processing systems was considered somewhat unreliable primarily because of poor and inconsistent tracking. Another more serious deficiency for the intended use was the multiple contact with both the emulsion and base side of the film. This is recognized as a frequent cause of surface damage which cannot be tolerated in an exploitation system.

b. By reference, the [redacted] proposes a modern concept of processing film chips with absolutely no physical contact with 25X1A

the emulsion or base of the film during any phase of the processing cycle. This is accomplished by plastic chip frames that are automatically transported from the loading rack, through each processing phase and through the dryer to a delivery chute. The processor employs the newly developed Super Levitron principle of solution agitation which has proven to be a superior method that provides the ultimate in evenness of development.

c. The proposed processor accommodates changeable magazines that accommodate 24 chips per loading. The processing rate is 10 chips per minute. The processor is self contained and suitable for daylight operation.

4. CONCLUSIONS:

a. A film chip processor is an essential item of equipment in the chip concept.

b. The chip processor proposed by [redacted] employs unique but sound modern processing and engineering principles. 25X1A

c. Design parameters of the processor are completely compatible with the chip system under development.

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5. RECOMMENDATIONS:

It is recommended that the referenced [redacted] proposal be accepted and that a contract be negotiated in the amount of [redacted] 25X1A 25X1A

[redacted]
Development Branch, P&DS